

*Bringger Consulting Ltd.*

# Social Impact Assessment For CSRC Maanshan Project



**CSRC Maanshan Project  
Anhui Province PRC  
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# 1. Brief Introduction

## 1.1 Project Introduction

China Synthetic Rubber Maanshan (Chemical) Industrial Ltd (hereinafter referred to as 'CSRC Maanshan') is located in Cihu Industrial Park, Maanshan City, Anhui Province in the People's Republic of China. CSRC Maanshan plans to input a 22.5 million US\$ of investment to expand the existing plant. The proposed expansion is split into two phases. Phase I is to renew and expand current production lines within the existing plant site in hopes of enhancing its annual production capability from 60,000 tons to 85,000 tons. Phase II (thereinafter referred to as 'the Project') is based on phase I expansion to add a new product line with an annual production capability of 40,000 tons so as to have its overall capacity of 125,000 tons per year. The project will make a total land acquisition of 58.9 Mu<sup>1</sup> (3.9 hectares) adjacent to the existing plant site.

CSRC Maanshan was invested and founded jointly by two foreign companies in 2000. Taiwan 'China Synthetic Rubber Corporation' holds an 86.2% stake via its Singapore subsidiary, and International Finance Corporation (IFC) holds the remaining 13.8% stake.

## 1.2 Assessment Objectives

Social Impact Assessment (SIA), as one part of the Environmental and Social Impact Assessment (ESIA), has designed to meet the requirements of relevant Chinese regulations as well as the standards and policies regulated by the International Finance Corporation. The purpose of the Social Impact Assessment of the project is summarized as follows:

1. To understand socio-economic status of adjoining communities, to have a concept of 'social baseline' prior to commencement of project construction;
2. To understand the ownership and usufruct of the land acquired for the project;
3. To conduct consultations with stakeholders and adjoining communities so as to agree on project construction and arrangement;
4. To identify the basic attitudes and concerns of stakeholders and adjoining communities towards the project;
5. To assess project potential social impacts and put forward measures for mitigation of adverse impacts.

## 1.3 Assessment Activities

Social Impact Assessment of the project was implemented from April 6, 2005 to April 10, 2005. Data was mainly gathered using the following techniques:

- Household socio-economic questionnaire (covering 96 households)
- Semi-structured interviews with individual stakeholders and small groups (5 people or less) – 40 interviews were conducted with over 150 participants.

Surveys were directed at the household head, or where the head was absent, to the next most senior household member. Stakeholder interviews covered relevant government departments, village council, production team heads, and village representatives. All interviews and questionnaires were conducted by a team of experienced interviewers from a PRC consulting company, Shanghai Bringger.

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<sup>1</sup> 1 Hectare=15 Mu

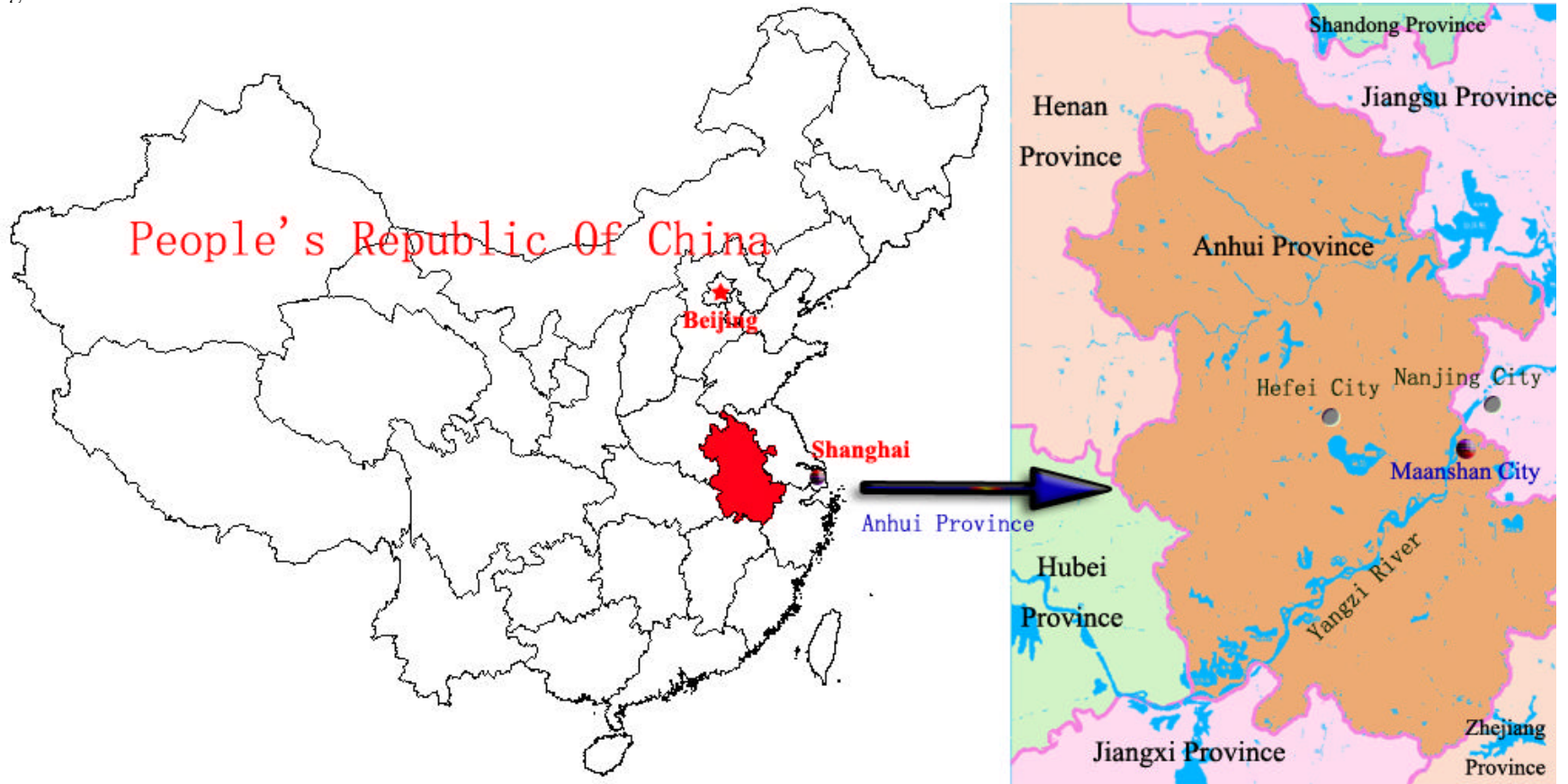
Social Impact Assessment completed the following tasks: (i) familiarized with the existing plant site of CSRS Maanshan and its land acquisition areas; (ii) Identified and analyzed stakeholders; (iii) Designed guideline for stakeholder consultation and questionnaire survey; (iv) Conducted 96 one-on-one household questionnaire surveys, some 200 individuals participated; (v) Undertaken consultations with adjoining communities and stakeholders in forms of meeting, semi-structured individual interview and group discussion, 40 interviews were conducted involving 150 participants; (vi) completed analyses on gathered data and information; (vii) Assessed potential social impacts and analyzed its social risk; (viii) Set up measures for mitigation.

#### 1.4 Terminology

The following terms are often referred to in this report. They are defined as below:

Stakeholders	Stakeholders are individuals, groups, organizations, or other interested parties, who may be able to influence the outcome of the project, either because they can contribute knowledge or ideas to improve the project design or mitigate social impacts, or because they have political influence over aspects of the project that needs to be considered. Stakeholders may include project affected people, politicians, local government authorities and agencies, local business organizations, research institutes and universities, the media and social or environmental organizations (local, national and international).
Project affected person (PAP)	Any person who as a result of the implementation of a project, loses the right to own, use, or otherwise benefit from a built structure, land (residential, agricultural, or pasture), annual or perennial crops and trees or any other fixed or moveable asset, either in full or in part, permanently or temporarily.
Vulnerable groups	People who by virtue of gender, ethnicity, age, physical or mental disability, economic disadvantage, or social status may be more adversely affected by the project than others and who may be limited in their ability to claim or take advantage of project assistance and related development benefits.
Involuntary Resettlement	Resettlement is involuntary where it occurs without the informed consent of the displaced person or, if they give their consent without having the power to refuse resettlement. Resettlement refers to the economic and/or physical displacement of people.

Figure 2-1 Location of Maanshan



## 2. Project Description

### 2.1 Project Location

The plant site of CSRC Maanshan is located in Cihu Industrial Park, Maanshan City, Anhui Province, China. Anhui Province is in the southeast of China with a total area of 139,600 square kilometers that accounts for approximately 1.45% of the overall area of China. Maanshan City lies in the east of Anhui Province, adjacent to Jiangsu Province, 40 kilometers from Nanjing, the capital of Jiangsu Province. Please refer to **Figure 2-1**.

Cihu Industrial Park is located in the north of Maanshan City with Yangtze River on the west, provincial border with Jiangsu Province on the north, and 205 National Road on the east. There are three villages (housing nearly 2,800 rural households) and 1,600 urban households in the park. The plant site of CSRC Maanshan is situated within Zhaoming Village, adjacent to Cihu River in the west, Maanshan BBKA Biochemical Co., Ltd in the south, and surrounded by village production teams and Gold Star Sulfuric Acid Factory in the east and north. The plant site is about 10 kilometers from downtown area of Maanshan city.

The other two villages within Cihu Industrial Park are respectively Yangjia Village and Liannong Village, 3 kilometers away from CSRC Maanshan. Please see **Appendix Figure A** for the plant site of CSRS Maanshan in relation to adjacent villages.

### 2.2 Project Land Acquisition and Resettlement

The project construction includes: (i) 12,000KW power generation facilities and a boiler; (ii) one product line with production capacity of 40,000 tons; (iii) new construction of 4,000-square meter warehouse; (iv) new construction of 5,000-cubic meter oil storage tank. Construction has a demand for 3.9-hectares land acquisition.

### 2.3 Affected Households

Affected households from land acquisition fall into the following two groups:

#### ✧ Directly Affected Households

The project requires 3.9 hectares of land, among which most of it is residential land and the remaining balance are fishpond and cultivated land<sup>2</sup>. Three production teams of Zhaoming Village, 22 households<sup>3</sup> in total, are to be affected. Twelve of them will be affected by physical relocation, seven by cultivated land (or fishpond) acquisition, while another 3 households will be affected by both land acquisition and physical relocation.

#### ✧ Indirectly Affected Households

Cihu Industrial Park aims to complete industrializing its designated land within the Park before year 2007. (By April 2005, seventy-six percent of collective agricultural land within the Park had been developed into industrial land.) Based on this target, Industrial Park Management Committee will attempt to relocate more households than required for project development. For this project, the Industrial Park government decided to relocate additional 77 households (102 individuals) adjacent to project sites together with the projected affected 15 households. Findings from public consultation revealed that households in the Industrial

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<sup>2</sup> Cultivated land is collectively owned by the village but is assigned by the village on a per capita basis to households to enable them to grow crops

<sup>3</sup> The number of directly affected individuals and households is based on the multiple materials provided by Cihu Industrial Park, CSRC Maanshan Corporation, Zhaoming Village Council and three production teams. It may have some gaps with the number of actual resettlement households.

park expressed their expectation for earlier relocation due to heavily cumulated industrial pollution in the Industrial Zone.

Up to now, for the other two adjacent village production teams, No.9 and No.10 production teams in Zhaoming village, there have been no project notification released publicly at the production team level.

During public consultations for the preparation of this report, all respondent villagers strongly expressed their hope for earlier relocation, which fit with the Cihu Industrial Park overall relocation target. Therefore the Industrial Park might consider relocating the remaining adjacent village production teams as well.

#### **2.4 Replacement Site**

The Cihu Township government had selected a replacement site which will accommodate all relocated households from the Cihu Industrial site. The replacement site named Jinjiazhuang is currently under construction and expected to be able to accommodate 2000 households at the end of 2005.

Jinjiazhuang replacement site is situated inside of Linli Village, Cihu Township, Jinjiazhuang District, Maanshan City. There will be 5,300 residential apartments constructed on a 55 hectare of land area. Jinjiazhuang replacement site is 5 kilometers from downtown area, and 6 kilometers from CSRC Maanshan plant site or its original village site. As indicated in the master plan of Jinjiazhuang replacement site upon its completion, it will be equipped with multiple public facilities such as primary school, junior high school, kindergarten, community club, commercial Pedestrian Street, retail market, fire protection equipments, medical clinic and post office etc.

At the time of preparing this report, the replacement site was under construction. A first 2,000 residential apartments is expected to be ready for use in December 2005.

#### **2.5 Project Construction Arrangement and Outside Construction Workers**

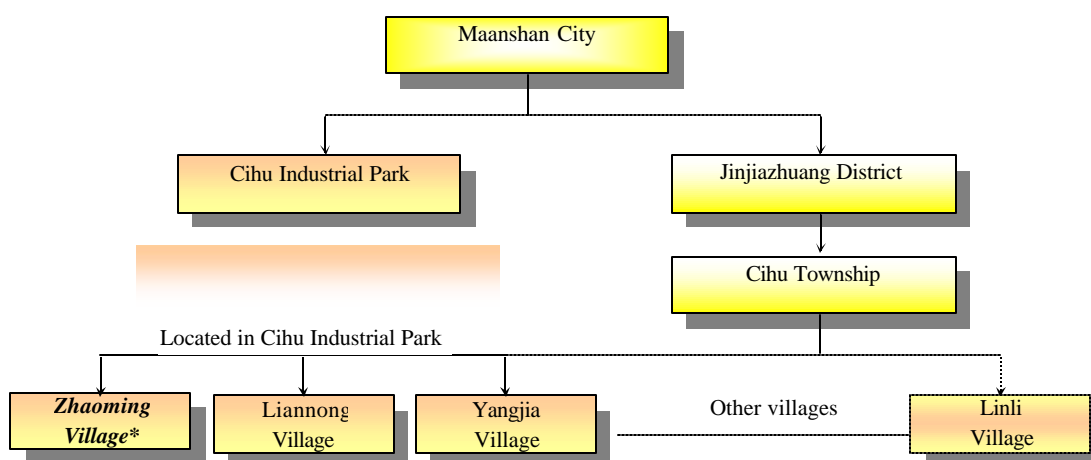
CSRC Maanshan construction is proposed to commence in August 2005 and complete at the end of 2006. Up to April 2005 construction bidding process had not yet commenced. Based on past experience of similar scale of projects, it is estimated that there will only be 50 to 100 outside workers working for the project construction at its peak time. Evidence showed in other project developments that a portion or all of the construction crew would be housed in village residential house.

### 3. Overview of Project Affected Communities

#### 3.1 Overview

Local government administrative structure and project-affected villages is illustrated below. Project affected village-Zhaoming Village is located in Cihu Industrial Park which is under the direct administration of Maanshan Municipal government.

Figure 3-1 Local Administrative Structure



\*Affected village

The following factors were taken into account in selecting affected adjoining communities for public consultation for the preparation of the Social Impact Assessment: (i) distance between a community physical location and CSRC Maanshan plant site; (ii) existence of physical barrier separating a community from CSRC Maanshan plant site. The Cihu Industrial Park where CSRC Maanshan plant located is relatively isolated and closed geographically, it therefore has very light impacts on communities beyond the park.

In addition to Zhaoming Village which is directly affected by land acquisition, there are two more villages situated within 3 kilometers of the project site; that is, Yangjia Village and Liannong Village in Cihu Industrial Park. While the geographic location of Cihu Industrial Park is relatively isolated, it is embraced by Yangtze River, provincial border with Jiangsu Province, a National Highway and an urban trunk road from all four directions.

Based on the above information, Zhaoming Village, Yangjia Village and Liannong Village in Industrial Park (2,800 households, 9,000 individuals in total) were selected as the key participants during the public consultation for the preparation of Social Impact Assessment.

Additionally, Linli Village which is adjacent to Jinjiazhuang Replacement Site is also covered in the public consultation activities.

#### 3.2 Cihu Township

Cihu Township located in the northwest of Maanshan City and belonging to an urban neighborhood, consists of 13 villages with an overall population of 26,000 and an area of 36 square kilometers. Three villages with a total population of 9000 sit inside of the Cihu Industrial Park, which are subjected to be relocated and urbanized to a replacement site 6 kilometers away towards the downtown center. Average annual per capita net income for rural dwellers in Cihu Township is 4,187 Yuan in year 2003, higher than Anhui rural average by

68%.<sup>4</sup>

Cihu Township is situated in the leeward area of Maanshan City, next to Yangzi River, with a developed transportation system suitable for industrial development. At present Cihu Township has gradually developed to become an industrial area for many corporations while Cihu Industrial Park had accommodated many chemical plants.

### 3.3 Cihu Industrial Park

Industrial Park and Economic & Technological Development Zone have been the significant carriers for economic development since Reform & Open Policy in the 1980s. A local government designates a land area of 10 to 20 square kilometers to foster local economic developments and sets up a specific Management Committee to promote commercial development projects proposed within its jurisdiction, This promotion extends to obtaining necessary approvals from provincial and state authorities, acquiring land for the project and supporting infrastructure, and constructing the supporting infrastructure (e.g., access roads, water and power lines, waste water drains, etc.) as well as formation of relevant tax policies and favorable policies. Typically for a designated Industrial Park and Development Zone contains collectively owned agricultural land<sup>5</sup>, which will be acquired for industrial development by land acquisition and compensation process executed<sup>6</sup> only by local government agencies under the name of a specific project development.

There are five Industrial Parks established in Maanshan City, Cihu Industrial Park, founded in 2002, is at city level with an original planned area of 12.63 square kilometers and was later adjusted to 9 square kilometers in 2004. Up until April 2005, seventy-six percent (76%) of the planned land had been industrialized while the remaining 24% (2.2 square kilometers) has yet to be developed. The majority of enterprises established in Cihu Industrial Park are of chemical and industrial nature such as CSRC Maanshan, Maanshan BBKA Biochemical Co., Ltd. and Gold Star Sulfuric Acid Factory etc. There are currently 69 industrial enterprises operating in the park employing approximately 10,000 staff in total.

By April 2005, the number of rural households living in the park is around 2,800<sup>7</sup> with an overall population of over 9,000. There are three villages located in the park, among which Zhaoming Village has some 850 households; Liannong Village with some 1,000 households and Yangjia Village with 950 households. An additional 1,600 enterprises' employees are living in Cihu Industrial Park as well. All the residents in the Park are subjected to be removed progress with the industrialization with a targeted completion in 2007.

All three villages situated in the Industrial boundary experienced many land acquisitions for project development in the past several years.

These villages in the Industrial Zone are all typically semi-urbanized rural villages with common characteristics such as: (i) wage-based income has become the key income source for villagers; (ii) a majority of the workforce is engaged in industrial activities while only senior aged people are involved in land related agricultural activities mainly for food subsidy (iii) surrounded by industrialized area and suffered from heavy pollution.

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<sup>4</sup> Annual per capita income for rural dwellers in Anhui was 2,499 Yuan in 2004. Anhui Statistic Bureau

<sup>5</sup> In China, there are two types of ownership of land, one is state owned land (mostly in urban areas), and the other is collectively owned known as village collective land (with farmlands mostly in Chinese rural areas).

<sup>6</sup> No land acquisition occurred until public infrastructural facilities or a specific project requirement and approval for the project land acquisition requirement was obtained from a government agency (usually at state or provincial level). Land acquisition and resettlement process therefore would be case by case even in the same Park. Generally speaking improvement will be made along with the overall development of the Park based on a combination of past experience, general goal of the local implementing government agencies and financial situation and its like.

<sup>7</sup> Estimated by Cihu Industrial Park Management Committee.

### 3.4 Project directly Affected Village

Zhaoming Village, directly affected by the project, is located within Cihu Industrial Park and consists of 11 production teams. It has a total population of 1,965 made up of 850 households. The work force number is around 1,300. According to information provided by the Zhaoming Village head, the average annual per capita income in the village is about 3,800 Yuan, below the rural level of Cihu Township, but higher than Anhui in 2004, average<sup>8</sup> by 52%.

A 3.9-hectares (58.9 Mu) of land acquired for the Project consists of partial residential land as well as a small quantity of fishponds and cultivated land<sup>9</sup>. Zhaoming Village Council will not reassign the remaining land after land acquisition and hence the 22 households directly affected by the Project will lose land or housing permanently as a result of land acquisition.

As mentioned in section 2.3. The Industrial Park Management Committee attempted to relocate more households than required for project development. There will be an additional 77 households (102 individuals) adjacent to project sites to be relocated at the time of relocating those 15 households directly affected by the project. And it is not yet finalized whether there will be more relocators in the other two adjacent villages. Findings from a public consultation revealed that people actually regard physical relocation as a positive impact from the project, although there are some concerns over the relocation process and compensation issues.

### 3.5 Adjoining Communities

There are another two villages - Yangjia Village and Liannong Village situated within Cihu Industrial Park besides Zhaoming Village which might be indirectly affected by the project development and therefore a public consultation in these two villages were conducted. The findings are summarized below: (please refer to **Appendix Figure A.**)

#### ▪ Yangjia Village

Yangjia Village, in the east of Cihu Industrial Park, consists of 950 households with, easy access for transportation with well bus connections to the urban area of Maanshan City directly.

Yangjia Village has more remaining cultivated land than the other two villages located within Cihu Industrial Park. The average cultivated land per capita at present is 0.7 Mu, below Anhui province average level of 1.2 Mu per capita. It has been revealed by the study that the majority of the village working force were taking advantage of easy transportation connections and chose to work in Maanshan City for more employment opportunities than those available in the Industrial Park. Non-skilled general construction work is what the majority workforce is engaged in. Due to the heavy industrial pollution in the Cihu Industrial Park, villagers indicated that hardly any crops they grew could be sold in the market by the way they looked and hence it could only be used for self-consumption.

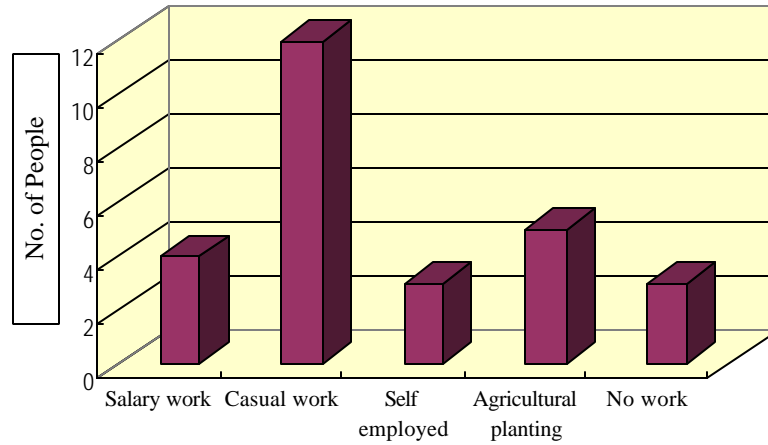
A glimpse from 14 households with a total number of 52 individuals (1.5% of total village households) indicate that 50% of family members were a working force who mainly engaged in non-agricultural activities. Only 19% of the working force work in agricultural planting.

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<sup>8</sup> Annual per capita income for rural dwellers in Anhui was 2,499 Yuan in 2004. Anhui Statistic Bureau

<sup>9</sup> Cultivated land is collectively owned by the village but is assigned by the village on a per capita basis to households to enable them to grow crops

Figure 3-2 Employment Situation of Labor Force in Yangjia Village



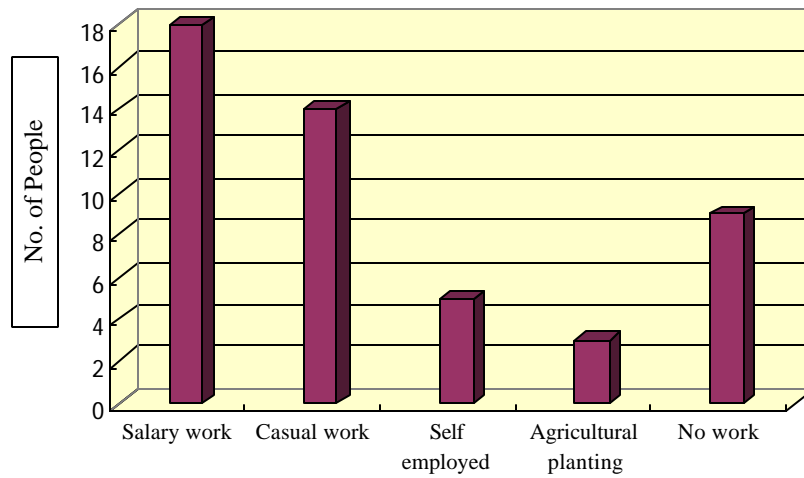
N=14

▪ **Liannong Village**

Liannong Village is situated in the west border of Cihu Industrial Park, adjacent to Yangtze River in the west, Jiangsu Province in the north, industrial land of Maanshan Iron & Steel Group in the south and Zhaoming Village in the east with Cihu River in between.

In comparison to the other two villages in the park Liannong Village has experienced more land acquisition for project development; it therefore retains the least cultivated land and meanwhile enjoys the highest rate of non-agricultural employment. A finding from a small scale of household interview covering 49 working force in 25 households in the Village revealed that 65% (32 individuals) of the working force engaged in non-agricultural activities.

Figure3-3 Employment Situation of Labor Force in Liannong Village



N=25

### **3.6 Other Related Communities**

Cihu Township government acquired partial land of Linli Village in 2004 for the development of Jinjiazhuang replacement site which will eventually accommodate all relocated households for various project development in Cihu Township. Daijiazhuang Production Team of Linli Village is located closest to the Replacement residential site, and therefore a public consultation was carried out with 42 villagers in that team.

The main findings from the public consultations are summarized in chapter 4.

## 4. Socio-Economic Survey and public consultation

### 4.1 Overview

A Socio-economic survey of adjoining communities was conducted during the period April 6-10, 2005. The questionnaire survey covered 96 households in three villages located within Cihu Industrial Park. It was instructed to focus on those population who would experience more impacts from the project, such as No.8, No.9 and No.10 production team of Zhaoming Village which is closely adjacent to CSRC Maanshan plant site and villagers in another two villages namely Liannong Village and Yangjia Village, who took isolated geographic relocation of this Industrial Park and a relatively small land acquisition and construction activities and limited adverse social impacts. It was regarded as unnecessary to conduct broader public consultations. There are 96 one-on-one questionnaire interviews conducted and some 40 open group discussions with a total number of 150 participants, which made a total number of participants in the public consultation activities of 350.

Figure 4-1 Household interview and focus group discussions



Table 4-1 Household Questionnaire Survey Coverage

Village	Production Team	Population	Household No.	Interviewed HH No.	Interviewed HH %
Zhaoming	No. 8	113	79	20	25%
	No. 9	305	95	18	19%
	No. 10	205	89	19	21%
<b>Subtotal</b>		<b>623</b>	<b>263</b>	<b>57</b>	<b>22%</b>
Yangjia		-	950	14	1%
Liannong		-	1000	25	3%
<b>Subtotal</b>			<b>1950</b>	<b>39</b>	
<b>Total</b>			<b>2213</b>	<b>96</b>	

Yangjia Village and Liannong Village are about 3 kilometers away from CSRC Maanshan plant site. The public consultation, was carried out in the form of open discussions and complemented with questionnaire survey to provide qualitative and quantitative information for representation of socio-economic status and of villagers and their general attitude towards the development of the project.

### 4.2 Characteristics of Survey Respondents

Surveys were directed to the 'household head'. Fifty-nine percent (n=57) of respondents were household head, and 33% (n=32) were the spouses of household heads.

Table 4-2 Relation of Respondent to 'Household Head'

	Total		Zhaoming		Yangjia		Liannong	
	N	%	N	%	N	%	N	%
Self	57	59%	38	67%	8	57%	11	44%
Spouse	32	33%	14	25%	6	43%	12	48%
Parents	2	2%	2	4%	-	-	-	-
Child	4	4%	2	4%	-	-	2	8%
Brother or Sister	1	1%	1	2%	-	-	-	-
<i>Total</i>	<i>96</i>	<i>100%</i>	<i>57</i>	<i>100%</i>	<i>14</i>	<i>100%</i>	<i>25</i>	<i>100%</i>

N=96

Forty-five percent (n=43) of respondents are male and 55% (n=53) are female. Sixty-nine percent (69%) of respondents aged over 40. Local dialect is the prevalent language spoken by respondents (only 3% of surveyed villagers spoke only mandarin instead of local dialect), although the dialect is differed by its pronunciation but still quite understandable by a non-dialect speaker. Respondents' education levels are summarized in Table 4-3. Thirty-two percent (32%) of them are observed as illiterates.

Table 4-3 Highest Educational Attainment of Respondents

Highest Attainment	Total		Zhaoming		Yangjia		Liannong	
	N	%	N	%	N	%	N	%
Illiterate	31	32%	18	32%	5	36%	8	32%
Primary School	20	21%	13	23%	3	21%	4	16%
Junior High School	36	38%	19	33%	5	36%	12	48%
High School	8	8%	6	11%	1	7%	1	4%
College	1	1%	1	2%	-	-	-	-
University or above	-	-	-	-	-	-	-	-
<i>Total</i>	<i>96</i>	<i>100%</i>	<i>57</i>	<i>100%</i>	<i>14</i>	<i>100%</i>	<i>25</i>	<i>100%</i>

N=96

### 4.3 Household Characteristics

#### ▪ Household Size and Type

Most household type is the 'nuclear family' (a couple with children, 43%, n=41). The average household size is 3.8, slightly higher than the Maanshan average of 3.3 family members<sup>10</sup>. Two out of the 3.8 members (53%) are a working force.

Table 4-4 Household Type

Household Type	Total		Zhaoming		Yangjia		Liannong	
	N	%	N	%	N	%	N	%
Single person living alone	14	15%	8	14%	3	21%	3	12%
Single parent with children	7	7%	4	7%	1	7%	2	8%
Couple without children / children moved out	13	14%	8	14%	2	14%	3	12%
Nuclear Family	41	43%	22	39%	7	50%	12	48%

<sup>10</sup> The average household size of Maanshan City is 3.3 according to Anhui Statistical Yearbook (2002).

Grandparents with children	1	1%	1	2%	-	-	-	-
Multigenerational Family	17	18%	12	21%	1	7%	4	16%
Joint Family	3	3%	2	4%	-	-	1	4%
<i>Total</i>	<i>96</i>	<i>100%</i>	<i>57</i>	<i>100%</i>	<i>14</i>	<i>100%</i>	<i>25</i>	<i>100%</i>

N=96

▪ Highest Educational Attainment of Household Members

Educational attainments of all household members were recorded as part of the survey. Eighty percent (80%) of the 96 surveyed households had one or more members completed the compulsory nine-year education period. Households with the highest educational attainment of Junior High School account for 44% (n=42), and those with the highest educational attainment of Senior High School accounted for 36% (n=25).

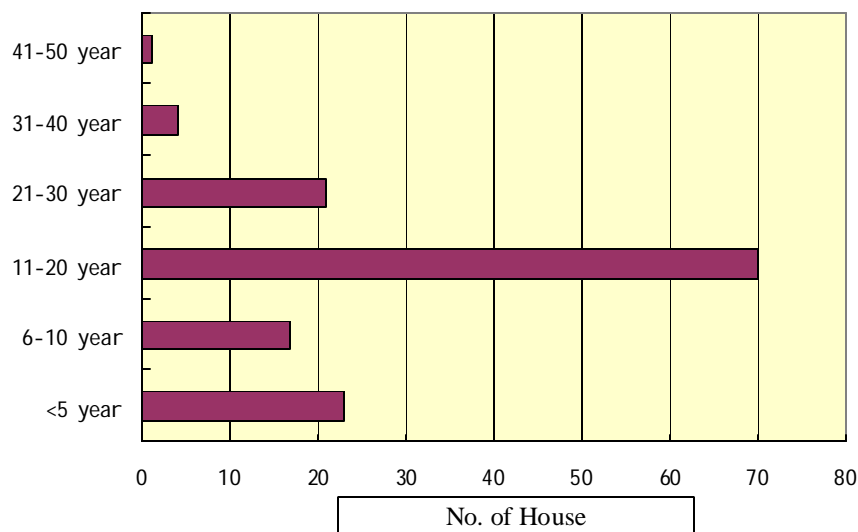
The educational attainments of villagers in Cihu Industrial Park are generally higher than the rural average of China. This is attributed to its close location to the urban area, adjacent to a large number of enterprises, and villagers' workforce actively seeking for non-agricultural employment.

▪ Housing Size and Type

Ninety-five percent (n=91) of the 96 surveyed households reside in the houses of their own, and the other 5% (n=5) residing in rental accommodation are relocators to land acquisition for other projects and chose to stay in their original villages as a temporary transitional measure prior to upcoming relocation in Jinjiazhuang replacement site at the end of 2005. There is only one respondent household reported as an outside worker.

The 91 homeowners possess 136 houses in total, that is, average 1.5 houses per household. Among them 76 houses (56%) are constructed of 'brick and concrete', 58 houses (43%) of 'brick and wood' and the remaining 2 (1%) are of simple structure. Fifty one of those 136 houses were constructed 10 to 20 years ago. Please refer to figure below for details:

Figure 4-2 Years Since House Construction



Under the national Law of Land Administration (1999), one dwelling for one rural household was permitted. It was later explained during semi-structured open discussion that villagers have had their underage children registered for a separate household to be eligible for

replacement houses at a purchase cost much lower than current market price. It therefore explained the reason why the number of dwellings exceeded the number of households.

#### 4.4 Land Allotted to Households

Twenty-four percent (n=23) of the 96 respondent households have no agricultural land allotted to them. Most of them are in Zhaoming Village (n=15) and Liannong Village (n=7), which is quite common in an area where many land acquisitions have occurred.

The type of land allotted to another 73 responded households could be grouped into ‘vegetable field’, ‘dry land’, and ‘paddy field’, of which are typical type in Chinese rural areas. As the rural collective land ownership belongs to the village collectively, each rural household will be allotted with land user rights sharing land on a per capita and quality of land basis and therefore one household could be allotted with the usership of several pieces of land and not necessarily all in a same area. The average per household agricultural land holding among the 96 respondent households is summarized below.

Table 4-5 Land Contracted by Households

Land Type	Total		Zhaoming		Yangjia		Liannong	
	No. of HH	Avg (mu)	No. of HH	Avg (mu)	No. of HH	Avg (mu)	No. of HH	Avg (mu)
Vegetable field	40(42%)	0.31	25(44%)	0.33	6(43%)	-*	9(36%)	0.44
Paddy field	24(25%)	0.45	12(21%)	0.35	12(86%)	0.4	-	-
Dry land	34(35%)	0.77	18(32%)	0.42	2(14%)	0.07	14(56%)	1.96
Fishpond	14(15%)	0.22	12(21%)	0.37	-	-	2(8%)	-*
No land	23(24%)	-	15(26%)	-	1(7%)	-	7(28%)	-
<i>Total</i>	<i>1.85</i>		<i>1.60</i>		<i>1.86</i>		<i>2.44<sup>11</sup></i>	

N=96. (Multiple choices).

\*: Average land hold per capital is less than 0.1 Mu. Lower than national average.

Figure 4-3 Agricultural Land and Fishpond

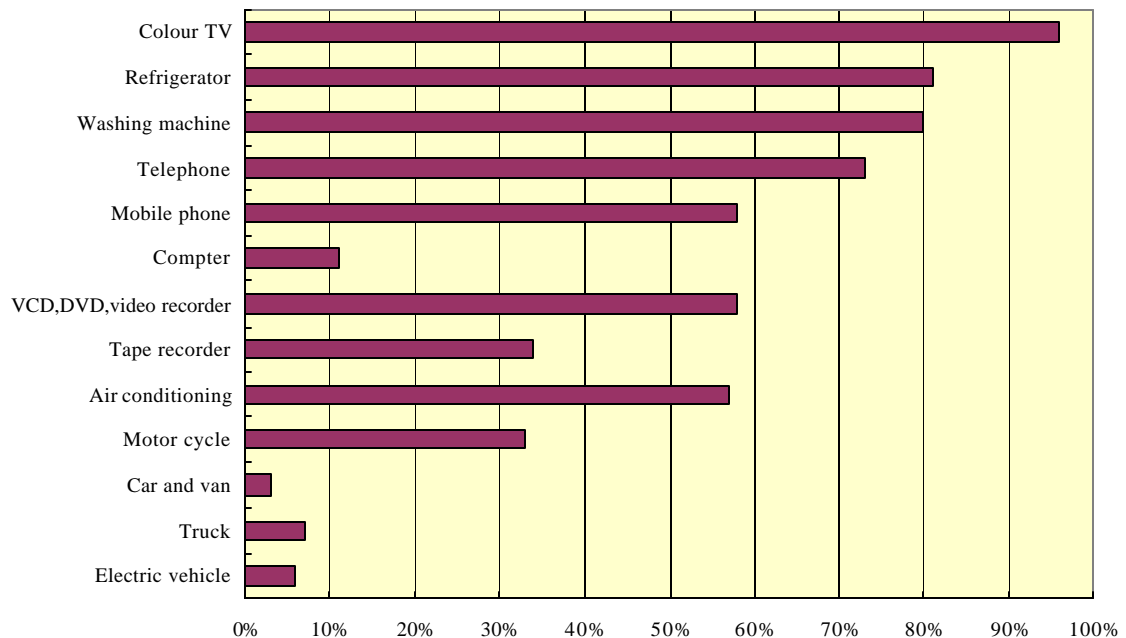


#### 4.5 Household Property

Household properties are summarized in the following figure. Surveyed households enjoy a higher percentage of luxury home appliances in comparison with the rural average in China.

<sup>11</sup> One surveyed household in Liannong Village holds as many as 14-Mu allotted land in total, which results in the high HH average land area in Liannong Village.

Figure 4-4 Key Properties of Households



N=96

In addition to a high ownership of ‘color TV’, ‘refrigerator’, ‘washing machine’, other luxury appliances like air conditioner (57%, n=55) also exhibit much higher ownership than the rural average<sup>12</sup> in China.

#### 4.6 Health and Health Services

It was reported that Cihu Industrial Park had experienced no outbreak of epidemic or infectious diseases over the past twelve months, although 51% (n=49) of respondent households had experienced illness of a family member, most (80%, n=39) proving to be ‘common diseases’, such as cold or fever.

Each of the three villages in Cihu Industrial Park has a medical clinic situated within its administrative boundary, but based on the findings from those surveyed villagers and from open discussions many people indicated they chose to go to Maanshan city hospitals for better treatment and enjoying the advantage of being close with easy access. The village clinic was used as local pharmacy for off counter pills.

#### 4.7 Household Income and Expenditure

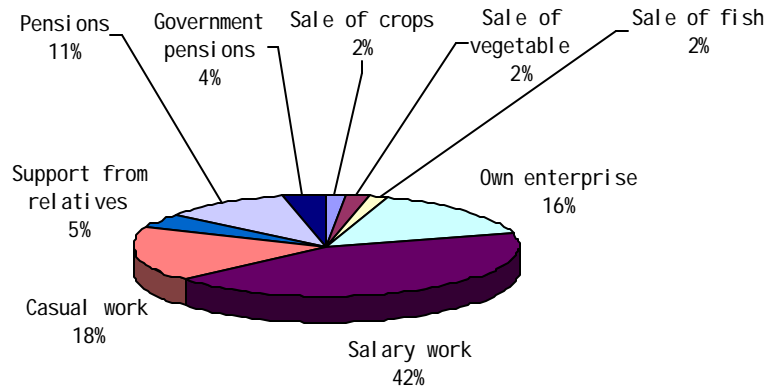
A question on detailed household income and expenditure was designed and conducted. Fifty-seven sampling was selected from three village teams which will experience the impacts directly. The key findings could be summarized as key income source, monthly income and expenditures and amount as illustrated in the followings.

##### Income

Key sources of income for Zhaoming Village is summarized in Figure 4-53. Income from salary work and casual work respectively makes up 42% and 18% of household income, and income arising from own enterprise and pensions respectively contributes 16% and 11% to the overall income.

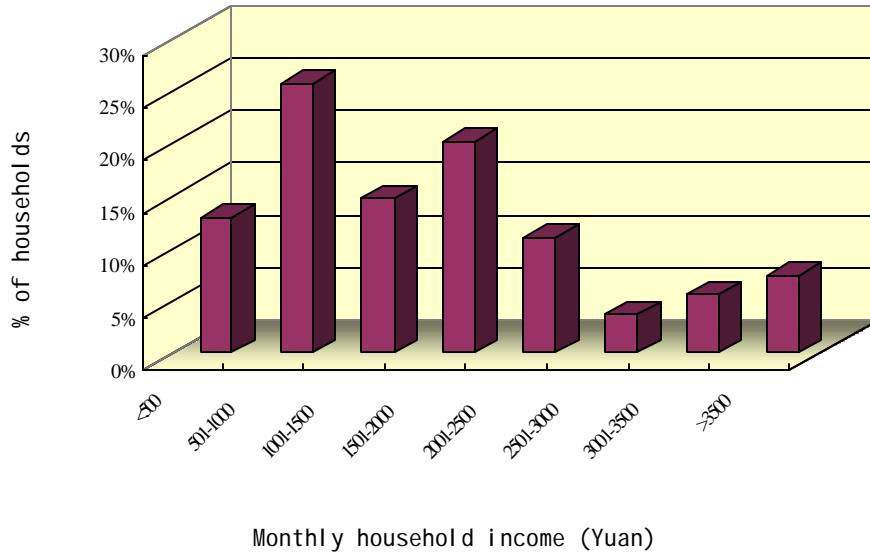
<sup>12</sup> The rural ownership rate of air conditioner in Anhui Province was 0.8% in year 2003.

Figure 4-5 Key Income Sources in Zhaoming Village



The 55<sup>13</sup> surveyed households in Zhaoming Village receive an average monthly income of 1,789 Yuan per household, and average annual income per capita hit 5,595 Yuan (\$674), higher than in 2004. Anhui rural average<sup>14</sup> is by 124%. The majority of respondent households' (33 households account for 60% of total responded households) monthly income ranges from 501 to 2,000 Yuan. Key findings are summarized below:

Figure 4-6 Household Monthly Income (Month/Household)



N=55. A highest and lowest reported income is excluded in the summary.

▪ Expenditure

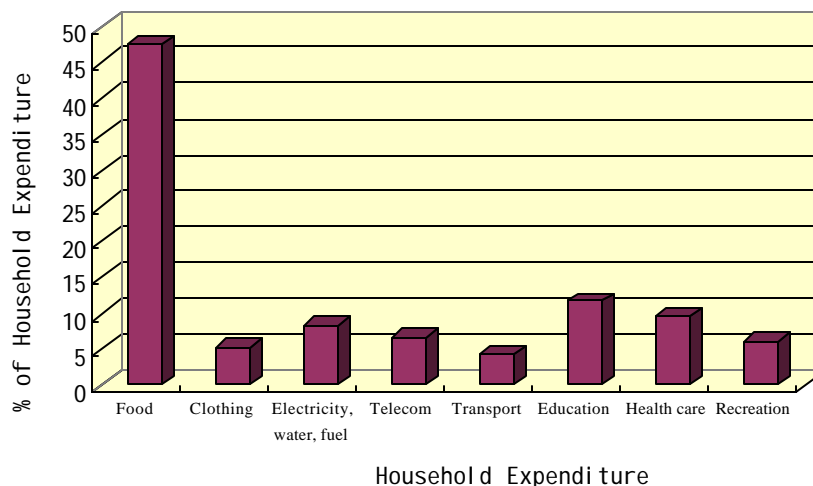
A breakdown details on daily expenditure items are indicated in the figure below. Daily

<sup>13</sup> Two households respectively giving the highest and the least response are omitted.

<sup>14</sup> Anhui rural per capita annual income was 2,499 Yuan in 2004 according to Anhui Statistic Bureau.

expenditures are net of expenses incurred for production (e.g. for seeds, fertilizer, pesticide etc). The largest portion of daily expenditure is for food, accounting for 48% of the daily expenditure.

Figure 4-7 Distribution of Household Expenditure



N=55. A highest and lowest reported income is excluded in the summary.

Surveyed households in Zhaoming Village make an average monthly expenditure of 1,529 Yuan per household. The monthly expenditure of 30 surveyed households (54%) ranges from 501 to 1,500 Yuan.

Fifty-one percent (n=49) of the total 96 surveyed households in Cihu Industrial Park and many in open discussions reported that the retail price had gone up in the last year over the past twelve months which resulted in the increase of household daily expenditure, while 43% (n=41) some other villagers reported a decrease. One third of those who reported increase in retail prices believed that the reasons of the increase were attributed to the inflow of the construction population.

#### 4.8 Knowledge of the Project

None of the three villages in Cihu Industrial Park showed high awareness of the Project. Even in Zhaoming Village situated closest to plant site, the awareness ratio was only slightly over 50%. Liannong Village with only 24% (n=6) of households indicated they knew about the Project, the lowest among all.

Table 4-6 Awareness of the Project

If aware	Total		Zhaoming		Yangjia		Liannong	
	N	%	N	%	N	%	N	%
Yes	49	51%	37	65%	6	43%	6	24%
No	47	49%	20	35%	8	57%	19	76%
<i>Total</i>	<i>96</i>	<i>100%</i>	<i>57</i>	<i>100%</i>	<i>14</i>	<i>100%</i>	<i>25</i>	<i>100%</i>

N=96

During public consultations, villagers regarded this project as one that was not different from the other project developments in Cihu Industrial Park. Respondent people are not particularly willing to answer questions as to whether they support the project or not. Most of them reported that those supportive villagers were to be relocated for the project development. Based on discussions with the Management Committee of Cihu Industrial Park who may

consider to relocate more people in the three directly affected village teams than what was originally required for the development of the project. An earlier relocating opportunity is widely regarded as a positive impacts of a project despite some concerns over daily living costs. As indicated in Section 4.7 on household expenditure, 48% of total household expenditure rested on food and was expected to increase in the absence of food subsidies from their previous land.

#### **4.9 Impacts of Adjacent Project Constructions**

Since the Project construction had not yet commenced, public consultation was directed to learning of major potential impacts from villagers' past experience. Over Sixty households participated in the discussions.

Seventy-seven percent (n=46) of surveyed households reported no positive impacts arising from the project constructions. 'Dust' (92%, n=55), 'noise' (55%, n=33) and 'health' (77%, n=46) were most often mentioned as adverse impacts. While 13% surveyed households (n=8) indicated adjacent project constructions had created job opportunities for them.

## 5. Potential Social Risks and Mitigation Measures

### 5.1 General

Project construction and future plant operations will possibly have the following impacts on local communities.

▪ **Positive impacts may include:**

- (i) Earlier escape from a highly polluted industrial area;
- (ii) Direct employment opportunities provided by construction contractors for the local work force (to be confirmed);
- (iii) Opportunities to provide goods or services (e.g. catering or accommodation) for outside construction workers to gain income;
- (iv) Opportunity for Village Council to set up collectively owned firms to contract partial constructions; (Council of Zhaoming Village plans to found Labor Service Company to win subcontract of earth work and fencing erection works for the Project);
- (v) Direct employment opportunities provided by CSRC Maanshan for local villagers (CSRC Maanshan plans to employ 4 local villagers to engage in cleaning and green tasks after completion of the construction work);
- (vi) Opportunity for Village Council to take advantage of downstream opportunities. (e.g. such as packing and transporting CSRC Maanshan products.).

Since the construction contract for the Project has not yet been awarded, CSRC Maanshan should prudently encourage future contractors to look at local businesses for inputs such as transportation, catering, accommodation, laundry and the like.

▪ **Adverse impacts may include:**

- (i) Loss of some agricultural and residential lands (22 households will be directly affected by land acquisition and at least an additional 77 households will be indirectly affected.) many households will experience hardships from physical relocation;
- (ii) Loss of public properties and infrastructure;
- (iii) Suspension of plant production;
- (iv) Impacts on cultural heritage;
- (v) Impacts of dust, noise and vibration induced by project construction;
- (vi) Public health and traffic safety;
- (vii) Adverse impacts caused by the influx of outside construction workers.

Stakeholder consultations revealed that local villagers presently pay no special attention to the Project. Based on past experiences project development, the willingness and the ability of handling those adverse impacts during the construction period will reflect on the image and reputation of CSRC.

### 5.2 Impact of Land Acquisition and Physical Relocation

The impacts from land acquisition to the adjoining village (Zhaoming Village) are summarized in Table 5-1.

Table 5-1 Impacts of Land Requirements

	Land Acquired (Mu)	Affected HH		Affected Production Team
		No. of HH	Population	
Directly affected	58.9 (3.9 Ha)	22	95 <sup>15</sup>	No. 8, 9 and 10
Indirectly affected	161.2 (10.7 Ha)	77	102	No. 8
<i>Total</i>	<i>220.1 (14.6 Ha)</i>	<i>99</i>	<i>197</i>	

Source: Cihu Industrial Park, Zhaoming Village Council and public consultation in April 2005

Land Acquisition and Resettlement Headquarters of Cihu Industrial Park, as the representative of Maanshan Municipal Government, is in charge of land acquisition and resettlement issues within the park. Measures of compensation and mitigation are mainly based upon ‘*Measures of Compensation for Land Acquisition and Resettlement in Maanshan City*’ enacted by Maanshan Municipal Government in March 2002 (hereinafter referred to as *Measures of Compensation for Resettlement*). ‘*Measures of Compensation for Resettlement*’ falls in compliance with relevant rules regulated by Central Government and Anhui Province.

Please refer to Resettlement Action Plan (RAP) for detailed information on project direct impacts and mitigation measures. The compensation standard for losses in the RAP is applied to all land acquisition in the Industrial Park. During the wide range of public consultation, villagers all reported their concerns over the timely compensation payment.

### 5.3 Replacement Residential Site – Jinjiazhuang

Jinjiazhuang replacement site was selected and will be constructed to accommodate all relocators from Cihu Township. It will be a big improvement in terms of living standards if a series of public facilities were equipped with a primary school, junior high school, kindergarten, community club, commercial pedestrian street, retail agricultural products market, fire protection facilities, medical treatment clinics and post office etc. A completed system of water, gas, power supply, telephone cable and CATV network as well as drainage system. This site had been carefully selected to be closer to the downtown center. Villagers participated in the process of selecting the site.

### 5.4 Suspension of Plant Production

There are three small firms established and operated by non-village people under a plant lease contract with a total seasonal employment of 10-50. These affected plants will be offered commercial arrangement and relevant compensations for their downtime, equipment moving, etc.

### 5.5 Impacts of Dust, Noise and Vibration

Potential construction impacts were identified during public consultations based on villagers past experience to the project construction development within the area; they are (i) noise and vibration caused by transportation of heavy-duty vehicles, mechanized works and workshop construction; (ii) dust caused by earthwork and heavy equipments.

Villagers are suffering from these adverse impacts generated by multiple constructions within Cihu Industrial Park on a long-term basis. During public consultations villagers expressed specific concerns on dust and noise. The project should certainly look for potential solutions to minimize impacts on dust and noise.

<sup>15</sup> Five directly affected households were not living in the village, the populations of households were estimated by Zhaoming village head.

Mitigation measures to be implemented:

- (i) To follow and instruct contractors to follow Cihu Industrial Park requirements halt construction operations after 22:00 to reduce noise impacts on neighboring villages;
- (ii) Contractors will work on minimizing dust from construction (e.g. watering, limitation of vehicle speed and closed-system of earthwork vehicle);
- (iii) Contractors will deliver full replacement cost for damages they made on houses or village infrastructure during construction period;
- (iv) Contractors will maintain a log of complaints from neighboring villagers to ensure they are addressed promptly. Damages to adjoining communities and corresponding compensations should also be recorded.
- (v) CSRC Maanshan will check the log of complaints monthly to ensure they are satisfactorily resolved.

## **5.6 Public Health and Traffic Safety**

Main health and safety risks during construction period may arise from: (i) influx of workers introducing diseases (epidemic disease, venereal disease etc); (ii) road safety risks from construction traffic movements through, or close to village communities; (iii) possible social security problems involving outside workforce.

Health-related impacts on adjoining communities brought by outside workers will not be reveal until the middle of the or later phase of construction. The following measures should be implemented to reduce these risks:

- (i) Developed mitigation measures should apply to all contractors or Subcontractors if any;
- (ii) Periodical physical examination for workers during construction period;
- (iii) Health-related education for workers and provide disease prevention drugs on-site and work in liaison with local healthcare management institutions for any emergency;

The following mitigation measures can be applied to minimize traffic, safety risks arising from construction vehicles: (i) to limit the movement speed of construction vehicles in adjoining communities; (ii) to designate access routes of construction vehicles and keep villagers adjacent to the routes informed of it via notification; (iii) to maintain a log of complaints from neighboring villagers about construction vehicles and get them resolved properly.

## **5.7 Impacts Caused by the Influx of Outside Construction Workers**

It is estimated that there will be 50 ~ 100 inflow construction workers during project construction. The presence of those inflow workers may bring some positive impacts to the local economy:

- House rental opportunities to generate other income (local monthly rate: 200Yuan/50m<sup>2</sup>);
- Extra purchase power from inflow of population.

Possible adverse impacts are predominantly the deterioration of social security.

As at April 2005, there were 27 construction sites with a total inflow population of 40,000 widely spread out in the 13 villages In Cihu Township among which 170 reside in Zhaoming Village, 50 in Yangjia Village and 2,000 in Liannong Village. A local Police office is responsible for the management of inflow population and public security within all 13

villagers of Cihu Township. They are fairly experienced in managing inflow population and their capacity of management has grown up rapidly in the recent years:

- (i) Registration of inflow population. A representative of police officers will pay his/her visit to a construction site right after its commencement to register inflow population.
- (ii) Establish a joint force with local villages to look for public interests on local security.

Based on the discussions with the police officers, there is no deterioration on public security as a result of the presence of inflow population.

### **5.8 Other Social Considerations**

In spite of the advanced production technology and environmental protection measures used in CSRC Maanshan, it is still inevitably causing pollutions to neighboring environments during packaging, transportation and other processing as carbon black blows into the air and lands elsewhere. CSRC Maanshan has implemented the following mitigation measures:

- (i) CSRC Maanshan has been providing free tap water to neighboring households since its establishment in 2000, as a type of compensation for its damage to villagers;
- (ii) Periodically give away laundry powder to nearby village households;
- (iii) Consultation with villager representatives and cash compensation for any severe damage especially after storms or big winds;
- (iv) Informal communications with the Village Council to understand their concerns;

It is revealed by the study that implementation of above measures has greatly improved the relationship between neighboring villagers and CSRC Maanshan.

## **6. Other Stakeholder Consultation**

### **6.1 Purpose**

The purpose of stakeholder consultation is to ensure that Project affected people and other interested parties are provided with clear information about the Project and are given the opportunity to provide feedback and make suggestions as to how design and implementation of the Project might reduce social impacts or otherwise be improved.

Stakeholder consultation is a key social risk management tool that enables parties' interests, concerns and areas of potential conflict to be identified early and resolved before they lead to delays in construction, or loss of goodwill amongst host communities.

Stakeholder consultation will be ongoing during project design, implementation and operations.

### **6.2 Stakeholder Identification**

As noted in Section 3.1, impacts of the Project are relatively localized, so consultations focused on the three villages within Cihu Industrial Park, especially about the potential impacts on Zhaoming Village. Relevant government agencies were also consulted. Key stakeholders are summarized below:

- Management Committee of Cihu Industrial Park
- Training and employment of Cihu Township
- Zhaoming Police Station – a local police office
- Head of Zhaoming Village, head of project directly affected village production teams
- Groups of villagers from Zhaoming Village, Liannong Village and Yangjia Village
- A group of villagers from Linli Village, a host community of the residential replacement site

The following techniques were adopted for the consultation:

- Household socio-economic questionnaire (96 households, over 200 people)
- Semi-structured interviews with individual stakeholders and small groups – 40 interviews were conducted with over 150 participants.

### **6.3 Issues Arising from Consultations**

Issues and suggestions raised by the different groups of stakeholders are summarised in the following sections. Understandably, concerns expressed towards the Project were less related to the project construction, but also more related to the potential business it might generate during its operational phase.

#### **6.3.1 Consultation with Management Committee of Cihu Industrial Park**

Consultation with Cihu Industrial Park focused on land acquisition and resettlement for the Project. Key participants were representatives from Management Committee of Cihu Industrial Park, Land Acquisition and Resettlement Headquarters of Cihu Industrial Park as well as Construction Management Agency of Cihu Industrial Park.

Management Committee indicated that they had taken into account villagers' expectations of early relocation and working to complete relocation of all residents within the park before 2007. Management Committee indicated that moving people in their existing group is one of

the main principal in planning any physical relocation, the existing village production team had been considered as an existing group and will be relocated in whole wherever possible.

Officials from Land Acquisition and Resettlement Headquarters provided a brief explanation on the procedures of land acquisition and resettlement, the means of information disclosure, as well as the source of resettlement fund and its estimated budget.

Construction Management Agency of Cihu Industrial Park made a detailed introduction about management measures on the construction teams within the park, and mitigation measures for adverse impacts.

### **6.3.2 Training and employment center of Cihu Township**

Maanshan City has specific Labor Security Institute in each Township, responsible for employment and security issues of the local population inclusive of relocated villagers. Training and employment center of Cihu Township deals with labor security affairs of all 13 villages in Cihu Township with Zhaoming Village covered.

Responsibilities of Cihu Township training and employment center was explained as :

- (i) Pension scheme for villagers after land acquisition, men aged over 60 or women aged over 55 are eligible for 120 Yuan per month.
- (ii) Planning and organizing trainings both general training and skill specific training;
- (iii) Population census for rural labor force and formation of labor employment records to provide effective assistance for rural labor force in their seeking of employment.

The training and employment center expressed their high expectation to be able to communicate with enterprises for the benefit of both the villagers and enterprises. Currently the center have a big pool of workforce that are currently under employed. They also expressed the difficulty of assisting man over 45 years or women over 40 years in finding employment or even temporary work. .

### **6.3.3 Zhaoming Police Station**

Discussions with Zhaoming Police Station were mainly to understand measures applicable to inflow population management and measures (Please refer to Section 5.8). The head of Zhaoming Police Station emphasized the importance of the project company to better manage the inflow construction crew through its contractors. He urged the company to take its responsibilities to the internal management of the construction crew.

### **6.3.4 Consultations with Village Heads, Production Team Leaders and Villagers from Three Villages in Cihu Industrial Park**

30 semi-structured interviews with over 100 participants were conducted with village heads, production team leaders and villagers in Cihu Industrial Park. Their comments are summarized below:

The large number of chemical enterprises in Cihu Industrial Park attributed to severe pollution. It has been worsening since more industries were attracted to settle down in this area for further development of the Park. Constructions of various projects have also caused many hardships for villagers. Villagers were suffering and therefore desired to move out of the park as the quickest to the solution. But some villagers also expressed their concerns over the cost of replacement housing and cost of living in an urban area after land for food subsidy was acquired.

Many villagers reported that young educated people are already working off-land somewhere else in urban area, and left less educated middle or senior aged villagers working in the field, who will be adversely impacted by land acquisition. It would be very difficult to find employment or other income resources. It would be more difficult for villagers aged between

40 to 55, they are not young enough to find jobs or old enough for pension.

A question also directed to the impacts from current CSRC Maanshan on neighboring communities, it was commonly reported by three adjacent village production teams that the final products of carbon black sometimes colored their clothes and crops especially when it was windy. Villagers also indicated the problems existed long before, they recognized the effects from the current carbon black plant to minimize the pollution and agreed the pollution had been significantly reduced since the establishment of the current carbon black plant. Villagers also mentioned that CSRC Maanshan recognized the impacts and therefore offered the three affected village teams with free piped water and some washing power.

### **6.3.5 Villages adjacent to the replacement site**

It is the master plan of Cihu Township that Jinjiazhuang replacement site was selected and to be constructed to accommodate all village relocators from the Cihu Township including Cihu Industrial Park. Currently the replacement site is under construction and expected to accommodate its first relocated villagers of 2,000 households at the end of 2005.

The host village of the replacement site is called Linli Village. It is situated next to the urban area and the majority of its villagers are working in the urban areas on a wage base. All of their agricultural land was acquired a few years ago and all claimed they received compensation payments. Their style of life had been transferred from rural to urban and reliant on purchasing of rice and vegetable from nearby markets.

Respondent villagers in Linli were happy but concerned about the development of the replacement site. Their key concerns are summarized as:

- (i) The increase of commodity price and cost of daily living as a result of the large number of inflow population;
- (ii) Nuisance from dust, noise and traffic safety issue during construction period;

However many more villagers regarded the development of the replacement site as an opportunity for the development of Linli Village itself:

- (i) Local economy could be triggered, especially for private businesses and small shop owners;
- (ii) Village public infrastructure would be constructed and improved along with the development of the replacement site.
- (iii) Created opportunities of providing service and accommodation to construction workers during construction period.

Overall, Linli villagers in general support the development of the replacement site and welcome relocated villagers.

## 7. Conclusion

The development of the project has limited adverse impacts to neighboring communities. Some potential social impacts identified during the public consultations fall into two groups: construction impacts and findings from relevant stakeholder consultations .

The identified mitigation measures for construction impacts are summarized as follows:

- Contractors should be encouraged or required to develop mitigation measures to minimize dust, noise and vibration caused by construction as well as other social impacts brought by construction workers on neighbouring communities. They may include limit of operation time, log of complaints and handling of complaints etc.
- As part of social risk management, CSRC Maanshan is accountable to supervise the implementation of social risk mitigation measures taken by contractors to see what results have been achieved. If necessary they should offer assistances to contractors.

Consultations with adjoining communities suggest the following issues should be addressed:

- CSRC Maanshan should help adjoining communities share in the following benefits arising from the Project:
  - (i) Possible direct employment opportunities provided by contractors for local work forces;
  - (ii) Opportunities to provide catering and accommodation services for inflow workers;
  - (iii) Opportunities for Village Council to set up collectively owned firms to contract some construction works;
  - (iv) Priority in employment opportunities provided by CSRC Maanshan for the project affected villagers;
  - (v) Opportunities for Village Council to set up collectively owned firms to win subcontract of downstream product-related projects.
- CSRC Maanshan should have full-time Public Affairs Managers to ensure sufficient and timely information exchange between CSRC Maanshan and interested parties including adjoining communities so as to enable potential conflict to be identified early and resolved before they lead to delays in construction, or loss of goodwill amongst host communities.

# Appendix

## Appendix A CSRS Maanshan and adjacent villages

